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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/509,395

09/28/2004

Kenji Ogawa

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EXAMINER

PHAM, TAMMY T

ART UNIT

PAPER NUMBER

2629

MAIL DATE

DELIVERY MODE

03/05/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/509,395

Applicant(s)

OGAWA ET AL.

Examiner

Tammy Pham

Art Unit

2629

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 06 December 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.

- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

***Response to Amendment***

1. Claims 1-4 have been amended. Claims 1-4 are pending.

***Response to Arguments***

2. Applicant's arguments with respect to claims 1-4 have been considered but are moot in view of the new ground(s) of rejection and newly amended claims.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

3. Claims 1-4 are rejected under 35 U.S.C. 102(e) as being anticipated by Naganuma (US

Patent No: 7,133,008 B2).

4. **In regards to independent claim 1**, Naganuma teaches of a method of driving a plasma display panel including a discharge cell, the discharge cell being formed at an intersection of a scan electrode and a sustain electrode, with a data electrode, the method comprising: dividing one field period (Fig. 2, item "1 Field") into a plurality of sub-fields (Fig. 2, items SF1-SFN), each comprising an initializing period (Fig. 2, item "Reset Period") wherein an initializing discharge is caused with use of a ramp voltage waveform (Fig. 3, items RPx, RPy (during the

“Reset Period”) or a gradually changing voltage waveform (Fig. 3, items RP<sub>x</sub>, RP<sub>y</sub> (during the “Reset Period”), a writing period (Fig. 2, item “Address Period”), and a sustaining period (Fig. 2, item “Sustain Period”); providing a first sustaining period (Fig. 3, item IP<sub>y</sub>, first pulse in “Sustain Period”) and a second sustaining period (Fig. 3, item IP<sub>y</sub>, second pulse in “Sustain Period”; Fig. 8, item IP<sub>y</sub>) in a sustaining period (Fig. 3, item “Sustain Period”; Fig. 8, item IP<sub>y</sub>) of at least one sub-field (Fig. 3), a sustain pulse (Fig. 3, item IP<sub>y</sub>) in the first sustaining period (Fig. 3, item IP<sub>y</sub>, first pulse in “Sustain Period”), has a first leading edge duration (Fig. 8, see first section of item IP<sub>y</sub> where pulse increasing from 0 to V<sub>s</sub>), and a sustain pulse (Fig. 3, item IP<sub>y</sub>) in the second sustaining period (Fig. 3, item IP<sub>y</sub>, second pulse in “Sustain Period”; Fig. 8, item IP<sub>y</sub>), that has a second leading edge duration (Fig. 8, item IP<sub>y</sub>b, in which pulse increasing from 0 to V<sub>s</sub>) such that the second leading edge duration (Fig. 8, item IP<sub>y</sub>b, in which pulse increasing from 0 to V<sub>s</sub>) is shorter than the first leading edge duration (Fig. 8, see first section of item IP<sub>y</sub> where pulse increasing from 0 to V<sub>s</sub>); and disposing the second sustaining period (Fig. 3, item Y<sub>i</sub>, second IP<sub>y</sub> pulse in “Sustain Period;” Fig. 8, item IP<sub>y</sub>b) at least at an end of the sustaining period (Fig. 3, item “Sustain Period”, column 9, lines 1-10).

5. **In regards to claim 2**, Naganuma teaches that in an initializing period (Figs. 2, 3; item “Reset Period”) of a sub-field (Fig. 2, item SF1-SFN; Fig. 3) succeeding the at least one sub-field (Fig. 2, item SF1-SFN; Fig. 3) including the first sustaining period (Fig. 3, item IP<sub>y</sub>, first pulse in “Sustain Period”) and the second sustaining period (Fig. 3, item IP<sub>y</sub>, second pulse in “Sustain Period”; Fig. 8, item IP<sub>y</sub>), the initializing discharge (Fig. 2, item “Reset Period”) is caused in a discharge cell in which sustaining discharge is caused in the at least one sub-field

(Fig. 2, item SF1-SFN; Fig. 3) including the first sustaining period (Fig. 3, item IPy, first pulse in "Sustain Period") and the second sustaining period (Fig. 3, item IPy, second pulse in "Sustain Period"; Fig. 8, item IPy, column 5, lines 40-55).

6. **In regards to claim 3**, Naganuma teaches that in the second sustaining period (Fig. 3, item IPy, second pulse in "Sustain Period"; Fig. 8, item IPy), the second leading edge duration (Fig. 8, item IPyb where the pulse is increasing from 0 to Vs) is set to a value (Fig. 8, item Vs) causes substantially no self-erase discharge (Fig. 8, item Vs).

7. **In regards to claim 4**, Naganuma teaches of a duration of the second sustaining period (Fig. 3, item IPy, second pulse in "Sustain Period"; Fig. 8, item IPyb where the pulse is increasing from 0 to Vs), is changed according to a percentage of lit discharge cells (column 9, lines 1-10).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shimizu et al. (US Patent No: 6,466,186 B1).

9. **In regards to independent claim 1**, Shimizu teaches of a method of driving a plasma display panel (Fig. 2, item 21) including a discharge cell (not shown), the discharge cell (Id.) being formed at an intersection of a scan electrode (Fig. 1, item 3) and a sustain electrode (Fig. 1, item 4), with a data electrode (Fig. 1, item 7), the method comprising: dividing one field period (Fig. 4, the combination of SF1-8) into a plurality of sub-fields (Fig. 4, items SF1-8), each comprising an initializing period (Fig. 8) wherein an initializing discharge (Fig. 19, "Sustaining Discharge Period;" Fig. 8, "Sustaining Period") is caused with the use of a ramp voltage waveform (Fig. 8, item VS) or a gradually changing voltage waveform (Fig. 8, item VS), a writing period (Id.), and a sustaining period (Id.); providing a first sustaining period (Fig. 8, t7-8) and a second sustaining period (Fig. 8, t11-12) in a sustaining period (Fig. 8) of at least one sub-field (Id.), a sustain pulse (Fig. 8, item VS) in the first sustaining period (Fig. 8, t7-8), that has a first leading edge (Id.) duration, and a sustain pulse (Fig. 8, item VS) in the second sustaining period (Fig. 8, t11-12), that has a second leading edge (Id.) duration; and disposing the second sustaining period (Id.) at least at an end of the sustaining period (Fig. 8).

10. Shimizu fails to teach of a sustain pulse in the second sustaining period that has a second leading edge duration, such that the second leading edge duration is shorter than the first leading edge duration.

11. Applicant has not disclosed any specific advantage or criticality to having a decreasing pulse versus an increasing pulse. As such, the decreasing pulse is an obvious matter of design choice.

12. It would have been obvious to one with ordinary skill in the art at the time the invention was made to have the sustain pulses be increasingly shorter or longer, since both would perform equally well at stabilizing the writing discharge (Shimizu, column 3, lines 26-29).

13. In regards to claim 2, Shimizu teaches that in an initializing period (not shown, but the "Pre-Discharging Period" which follows the sub-field shown in Fig. 8) of a sub-field (Fig. 8) succeeding the at least one sub-field (Fig. 8) including the first sustaining period (Fig. 8, t7-8) and the second sustaining period (Fig. 8, t11-12), the initializing discharge (not shown, but the "Pre-Discharging Period" which follows the sub-field shown in Fig. 8) is caused in a discharge cell in which sustaining discharge is caused in the at least one sub-field (Fig. 8) including the first sustaining period (Fig. 8, t7-8) and the second sustaining period (Fig. 8, t11-12, column 8, lines 39-42).

14. In regards to claim 3, Shimizu teaches that the second leading edge duration (Fig. 8, t11-12) is set to a value that causes substantially no self-erase discharge (Fig. 8, pulse value during t11-12 is a non-zero value).

15. In regards to claim 4, Shimizu teaches that the duration of the second sustaining period (Fig. 8, t11-12) is changed according to a percentage of lit discharge cells (Fig. 9, lines 38-45).

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*Conclusion*

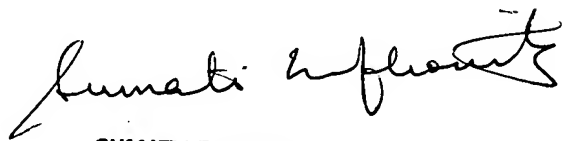
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tammy Pham whose telephone number is (571) 272-7773. The examiner can normally be reached on 8:00-5:30 (Mon-Fri).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sumati Lefkowitz can be reached on (571) 272-3638. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

TP  
29 February 2008

  
*Tammy Pham*  
Patent Examiner  
Art Unit 2629

  
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